DOCUMENT RESUME

ED 465 537 SE 066 164

| | |
|---|---|
| TITLE | What Is Equity? A Look into a Reform Math Classroom. Weaving Gender Equity into Math Reform. |
| INSTITUTION | TERC, Cambridge, MA. |
| SPONS AGENCY | National Science Foundation, Arlington, VA. |
| PUB DATE | 2001-00-00 |
| NOTE | 34p. |
| AVAILABLE FROM | TERC, Inc., Weaving Gender Equity, 2067 Massachusetts Ave., Cambridge, MA 02144. Tel: 617-547-0430. For full text: http://www.terc.edu/wge/equitysession.html. |
| PUB TYPE | Guides - Classroom - Teacher (052) |
| EDRS PRICE | MF01/PC02 Plus Postage. |
| DESCRIPTORS | Educational Change; Elementary Education; *Equal Education; Ethnicity; *Gender Issues; Instructional Materials; Mathematics Curriculum; Mathematics Instruction; Sex Discrimination; Socioeconomic Status |

ABSTRACT

The Weaving Gender Equity into Math Reform project at TERC has created a two- hour workshop session on equity in the standards-based mathematics classroom that is appropriate for use as a professional development tool with teachers, staff developers, after-school program providers, and other educators who work with parents. "What is Equity?" can be used as a stand-alone workshop or as part of an extended in- service training program for teachers and administrators. This session is intended to address equity related issues that surface in standards-based reform mathematics classrooms. Issues of teacher and student learning are also addressed along with discussions around specific equity issues that participants face in their school and classroom environments. The beginning of the session asks participants to reflect on their own experiences in math class and to relate this to the experiences that their students face in reform-based mathematics classrooms. Then, they will consider specific equity issues that arise and brainstorm ways to work through these issues. A discussion around notions of equity and equality will follow. Finally, participants will be asked to create a plan of action and identify people with whom they will share their thinking and questions. Blackline masters, transparencies, and handouts are included. (MM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 465 537



# What is equity?
# A look into a reform math classroom

This session is intended to address equity related issues that surface in standards based reform mathematics classrooms. Issues of teacher and student learning are also addressed along with discussions around specific equity issues that participants face in their school and classroom environments. This session is intended to be used with a wide range of audiences - teachers, staff developers, administrators and district leaders. This session is intended to be 2 hours in length.

*(Note: in this workshop, standards based reform (or reform) is used to describe classrooms and methodologies that utilize an inquiry based approach to teaching and learning. The standards referred to are the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics (2000).*

The beginning of the session asks participants to reflect on their own experiences in math class and to relate this to the experiences that their students face in reform-based mathematics classrooms. Then, they will consider specific equity issues that arise and brainstorm ways to work through these issues. A discussion around notions of equity and equality will follow. Finally, participants will be asked to create a plan of action and identify people with whom they will share their thinking and questions.

This session will help participants think of the particular nuances inherent in classrooms using math reform curricula, identify equity issues to explore and develop ways of bringing other people into the conversation.

**Preparing for the session:**

Become familiar with the following parts of the workshop session:
Transparency 1: Opening quote from Robert Moses
Transparency 2: Definitions of Equity and Equality
Transparency 3: Equity questions for small group work
Transparency 4: Closing questions

Read:
"Conceptions of Equity" by Walter Secada
"The Equity Principal" (NCTM 2000)
"Uncovering Bias in the Classroom: A Personal Journey." By Maryann Wickett
"Creating New Inequalities Contradictions to Reform" by Linda McNeil

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

A. Rosebery

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

©Copyright 2001, TERC, Inc. All rights reserved

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Make copies of the following:
Handout 1: Definitions of Equity and Equality
Handout 2: Conceptions of Equity (optional)
Handout 3: Equity questions for small group work
Handout 4: Uncovering Bias in the Classroom: A Personal Journey by Maryann Wickett
Handout 5: *(optional)* Creating New Inequalities (Contradictions of Reform) by Linda McNeil
Handout 6: Equity Principle, NCTM 2000

**Activity 1: Introduction and context for talking about equity (20 min.)**

Show the following quote on transparency 1:

"In today's world, economic access and full citizenship depend crucially on math and science literacy."

-Robert Moses, *Algebra Project. Bob Moses Empowers Students*, New York Times, Education Life. January 2001

The goal of this session is to think together about ways to develop the mathematics and science literacy of *all* students. Bob Moses, a longtime civil rights worker and founder of the nationally acclaimed Algebra Project often frames this topic by stressing that "mathematics is the new civil rights prize".

The standards based reform movement was formed because of the disparities and educational chasms that exist between wealthy and poor schools, urban and suburban schools. Researchers, teachers and educational leaders decided to focus on the content of mathematics instruction and not simply rote procedures that leave many students unable to make connections between mathematical relationships.

When you reflect on who typically did well in more traditional classrooms, it was usually the student who was great at memorizing facts. Often it did not have much to do with whether students understood the mathematics or not. In American schools, students who continue to do the best are by-in-large White males from high socio-economic families to the exclusion of girls, people of color and students from lower socio-economic families.

Together we will explore the notion of how working in more reform-based ways can help "level the playing field" for *all* students, particularly those from low socio-economic families, students whose first language is not English, girls and children of color. By looking closely the equity issues inherent in mathematics education and the ways in which reform math curricula address many of these issues, we can stem the "rising tide of mediocrity" identified in *A Nation at Risk:*

©Copyright 2001, TERC, Inc. All rights reserved 

*The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983) and later revised in A Nation Still at Risk (1998).

In order to begin thinking about equity issues in reform-based mathematics classrooms, I would like for you to think about what math class was like for you as a student in elementary school.

*(Note: This reflection does not have to be tied to a particular grade. If asked, tell participants to think about when they were the age of the students currently in their class.)*

Offer participants a chance to jot down a few notes or to reflect quietly before beginning the discussion. As participants share their reflections, record their thinking on a transparency or chart paper that has been divided into two columns, as below.

After recording and discussing the characteristics of math class when participants were students on the "own experiences" side of the chart, ask them what math class is like for their students. In essence, what are the characteristics of their own classrooms? This feedback is then recorded on the "students' experiences" side of the chart. (Save and post this chart for use in subsequent activities.)

Here is a sample:

| Own Experiences | Students' Experiences |
|---|---|
| Students sitting in rows | tables or desks arranged in clusters or moved to clusters when working on an activity |
| One right answer | multiple strategies and solutions to problems |
| Teacher in the front of the room | teacher walking around working with students individually and in groups |
| Students going to the board to work on a problem while the other students looked on | students working with manipulatives and sharing strategies and solutions in cooperative groups |
| quiet classroom with students working independently | noise level varies with activities |

©Copyright 2001, TERC, Inc. All rights reserved 

| | |
|---|---|
| red marks for solving problems in a different way than prescribed by the teacher | students sharing strategies and defending their thinking |
| hoping that I wouldn't get called on because I didn't know how to do the problem and would be embarrassed | mistakes are valued and part of the culture of learning in the class |
| I loved it because I knew how to do the right procedures | students understand procedures and context of problems |
| math was boring | students are excited to do math |

After the chart is completed, begin a conversation focusing on the similarities and differences on either side of the chart.

Let's look at both sides of the chart and think about how equity and access is promoted or impeded for students. Are there any major areas of difference that stand out? How do the "newer" ways of working (i.e. reform based) address issues of equity in your classrooms?

At this point, participants usually bring up issues from the list such as:

- Math class seemed to be more equitable (in my own experience) since everyone was doing the same thing at the same time.
- It seemed equitable that everyone had an equal chance of getting the right answer when I was in school but I always solved the problem in a different way than the teacher and other students. My strategy wasn't "right" and I was marked down because of it. Today's students have more access because there are different approaches that are valued.
- In my own classroom, students work in cooperative groups, which helps them, explain their strategies to each other.

**Activity 2: Equity vs. Equality (30 min.)**

We have shared our experiences through several scenarios illustrating differences in traditional and reform-based classrooms. There are two words frequently used when talking about both models: "equity" and "equality".

Oftentimes we think of these two things (equality and equity) as being the same. Yet there are differences in what they mean and in the implications each has for

©Copyright 2001, TERC, Inc. All rights reserved 

classrooms. Let's look at definitions of equality and equity in the context of our previous discussion.
*(Note: these are only two definitions. Researchers themselves don't even agree on a single definition.)*

Hand out definition of equality and equity sheet and put on the overhead projector. Transparency 2, Handout 1.

- Equality means treating all students the same. Examples of this are: (1) Same required courses; (2) Same assignments; (3) Same assessment criteria; (4) Same amount of teacher time spent for each student.
- Equity means treating students fairly by taking into account differences. Examples of this are: (1) Different ways to demonstrate mastery; (2) Tailoring instruction to students' various learning styles; (3) Varying teacher time and help depending on students' needs; (4) Providing bilingual curriculum materials to students whose first language is not English.

Have a brief discussion around the ideas of equity and equality and point out that participants will have an opportunity to think about it more during the next activity. Relate the two concepts back to the "then and now" list. Talk about how traditional classrooms tend to focus more on equality, while standards-based classrooms tend to focus on equity.

---

*Optional-if time permits*
*Note: If you do not have time to conduct the entire workshop, omit this activity. At the end of the workshop session hand out Conceptions of Equity by Walter Secada. (Handout 2)*

Looking at classrooms in terms of equity and equality characteristics is one way to approach the topic. There are other perspectives that you may want to consider. Walter Secada, Professor of Curriculum and Instruction at the University of Wisconsin-Madison has developed definitions of equity that are worth investigating

Distribute copies of Conceptions of Equity (Handout 2) to participants. Give them a few moments to read this document and then ask them to discuss the following question at their tables:

- What do you see as the benefits or drawbacks to each of the conceptions?

After participants have had a chance to discuss the 6 definitions that Secada illustrates move into the next activity. You do not need to conduct a whole group discussion after this activity.

©Copyright 2001, TERC, Inc. All rights reserved 

**Activity 3: Thinking about our classrooms (30-min.)**

Secada (and others) have spent a great deal of time thinking and conducting research regarding the benefits of math reform. Many of the characteristics of reform math curricula were included in the NCTM Standards (2000) as a way to get more students engaged in high quality mathematics learning. We have already discussed our own experiences in math class and related this to our students' experiences in math class. We will look at the chart created in the first activity in order to think more about specific equity issues relevant to your classroom and school.

Look back at the chart from Activity 1. Sort the items on the chart into themes. Participants will choose a theme they want to focus on and be grouped with others who want to discuss the same theme.

Here are sample themes: *Feel free to add others as they surface in the workshop.*

- problem-solving strategies
  -one right answer
  -knowing procedures
  -getting lower scores on tests because the problem was solved in an unconventional way
  -discussing multiple strategies in small group and with the whole class

- the role of the teacher
  -the teacher moves around the classroom helping and checking in with students
  -the teacher typically had the answer "guess what the teacher is saying"
  -the teacher is responsible for understanding math content and pedagogy

- classroom management/climate
  -students sitting in rows
  -quiet classroom
  -materials are accessible to students

- grouping of students
  -students work in cooperative groups
  -students typically worked alone

- assessment
  -getting graded on math tests
  -portfolio assessment
  -having students better understand their own mathematical progress
  -correlating grades on report cards with ancedotal records and evaluation of student work

©Copyright 2001, TERC, Inc. All rights reserved 

- classroom discourse
  -students regularly discuss ideas and strategies with each other
  -mathematical relationships are also explored in other curriculum areas
  -not allowed to share answers or talk during math class

Try to keep groups to about 4 or 5 participants. Two or more groups can discuss similar topics if the interest is there. Be sure that someone takes notes and is able to report back to the whole group. Suggest that each group choose one item to share with the large group and encourage the other workshop participants to comment and give feedback to each presentation.

| |
|---|
| In your group, think about the equity issues related to your chosen topic. What have your experiences been in establishing an equitable classroom in terms of your topic? What are the benefits of working equitably? What's been a challenge? How does the curriculum support equity in terms of your topic? |

Show transparency 3 and then give each group a copy of the questions. (Handout 3)

*Note: Be sure to remind participants that everyone should have an opportunity to talk in their small group. As a facilitator, it is important that you circulate between groups in order to redirect them to the task of thinking about how the curriculum supports equity regarding their group topic.*

**Activity 4: Share back (30 min)**

| |
|---|
| Each group is going to share one of the equity issues related to the theme discussed in the small group. As a large group, we will offer feedback and share strategies around supporting an equitable classroom environment in math. |

The discussion should go beyond looking at the lists that groups may have created. Try to go in-depth on some of the equity issues and questions that participants share. Use the group to facilitate the discussion rather than you (as the workshop leader) dispensing information. Remind participants that they should use each other to brainstorm solutions and to think more deeply about the equity issues that come up.

Here is a sample discussion:

> Report from group 1: *"We talked about ways of grouping students. Most of us group students according to ability level. That way we can give specific help to the students that need it."*

©Copyright 2001, TERC, Inc. All rights reserved 

Workshop Leader (WL): *"What about the rest of you? How do you group students?"*

Other people comment that they use cards to randomly assign students, use a class list or have students pick their partners and groups.

WL: *"It seems that different model (ways of grouping students) are used at different times." In thinking about grouping by ability levels-what equity issues come to mind?*

Participant: *" Well, if you don't group by ability level then the gifted kids are going to be bored."*

Participant: *"Maybe. However, if you group homogeneously then students don't have the opportunity to hear about strategies that they may not have thought of. I've seen kids at the higher end have their thinking stretched by student who usually struggles in math."*

Participant: *"I make sure to have an equal number of girls and boys in each group so that it's fair."*

WL: *"We've heard a lot of strategies and reasons behind various ways of grouping students. One person says that they group by ability and another makes sure there is a gender balance and still others may assign students to random groups. If the goal of reform-based instruction is to tailor instruction to each student's needs, how do each of these strategies support or limit this goal?*

Participants comment.

In the above conversation, the workshop leader does not give an answer but rather redirects the participants to further explore issues of equity related to the topic.

**Activity 5: Measuring change (10 min.)**

We have only begun to scratch the surface in talking about equity issues in our classrooms and schools. This session is coming to a close. Yet, I would like for you to reflect on your ideas coming in and your ideas and questions as you leave. For the next ten minutes or so, I would like for each of you to focus on the following questions:

- How does your thinking about equity manifest itself in your classroom?
- What issues are you going to continue to investigate?
- How and with whom are you going to continue work on equity and its' relation to classroom pedagogy? (Plan at least one concrete next step, one main question or concept that you will share with a colleague.)

©Copyright 2001. TERC. Inc. All rights reserved 

Write about these questions and develop a plan for sharing ideas (show these questions- transparency 4)

When participants have finished freewriting, hand out Wickett article (Handout 4) as an example of what can happen when you start to look more closely at your classroom. Also, at this time you can handout, Creating New Inequalities (Handout 5-optional) and The Equity Principle –NCTM (Handout 6-optional)

This session can't touch on all of the equity issues in standards-based classrooms. It is meant to be a starting point (or a point along the continuum) for reflection and discussion. Hopefully you will leave this session committed to the idea of mathematics and mathematical literacy as a civil rights issue for all of the students in your classroom.

Participants fill out evaluations.

©Copyright 2001, TERC, Inc. All rights reserved 

# What is equity?
## A look into a reform math classroom

**Handouts and Transparencies**

Transparency 1: Opening quote, Bob Moses
Transparency 2: Equity and Equality definitions
Transparency 3: Equity questions
Transparency 4: Closing questions

Handout 1: Equity and Equality definitions
Handout 2: Conceptions of Equity by Walter Secada (optional)
Handout 3: Equity questions for small group work and large group discussion
Handout 4: Uncovering Bias by Maryann Wickett
Handout 5: (optional) Creating New Inequalities, Contradictions of Reform by Linda McNeil
Handout 6: (optional) Equity Principle, NCTM 2000

Read these for background information before the session begins:

Handout 2: Equity Principal (NCTM 2000)
Handout 3: Conceptions of Equity by Walter Secada
Handout 5: Uncovering Bias by Maryann Wickett
Handout 6: Creating New Inequalities Contradictions to Reform by Linda McNeil

©Copyright 2001, TERC, Inc. All rights reserved 

## What is equity?
A look into a reform math classroom

### References

A Nation at Risk: The Imperative for Educational Reform (National Commission on Excellence in Education, 1983

A Nation Still at Risk (1998)
http://edreform.com/pubs/manifest.htm

Anyon, J., Social Class and the hidden curriculum of work. Journal of Education, 163,67-92.1980

Kozol, J., Savage Inequalities: Children in American Schools. New York; Crown, 1991

Moses, Robert, Radical Equations, Beacon Press, 2001

National Council of Teachers of Mathematics, Principles and Standards for School Mathematics, 2000

Sadker, M., & Sadker, D. Failing at Fairness: How America's Schools Cheat Girls. New York, Charles Scribner's Sons.1994

Weaving Gender Equity website http://www.terc.edu/wge

©Copyright 2001. TERC. Inc. All rights reserved 

Transparency 1

# "In today's world, economic access and full citizenship depend crucially on math and science literacy."

-Robert Moses, *Algebra Project. Bob Moses Empowers Students,* New York Times, Education Life. Jan.2001

©Copyright 2001, TERC, Inc. All rights reserved 

Transparency 2
Handout 1

# Definitions of Equality and Equi

**Equality** refers to treating all students the same.

- Same required courses
- Same assignments
- Same assessment criteria
- Same amount of teacher time spent for each student

**Equity** refers to treating students *fairly* by taking into account differences.

- Different ways to demonstrate mastery
- Tailoring instruction to students' various learning styles
- Varying teacher time and help depending on students' needs
- Providing bilingual curriculum materials to students whose first language is not English.

Adapted from Laboratory for Educational Improvement of the Northeast and Islands (1995). Activity 2: Science and mathematics for all in *Facilitating Systemic Change in Science and Mathematics Education: A Toolkit for Professional Developers.* Andover, MA

©Copyright 2001, TERC, Inc. All rights reserved 

Transparency 3
Handout 3

What have your experiences been in establishing an equitable classroom in terms of your topic?

What are the benefits of working equitably?

What's been a challenge?

How does the curriculum support equity in terms of your topic?

©Copyright 2001, TERC, Inc. All rights reserved 

Transparency 4

How does your thinking about equity manifest itself in your classroom?

What issues are you going to continue to investigate?

How and with whom are you going to continue work on equity and its' relation to classroom pedagogy? (Plan at least one concrete next step, one main question or concept that you will share with a colleague.)

©Copyright 2001, TERC, Inc. All rights reserved 

# Uncovering Bias in the Classroom:

## *A Personal Journey*

by Maryann Wickett

This article will appear in the 1997 NCTM yearbook
*Multicultural and Gender Equity in the Mathematics Classroom:*
*The Gift of Diversity*

Weaving Gender Equity Handout 4

BEST COPY AVAILABLE

# Uncovering Bias in the Classroom—A Personal Journey

## Not in My Classroom

We hear about it often. The evidence is out there, boys have greater opportunity in mathematics (American Association of University Women 1992). Teachers call on boys more often than girls (Kaplan and Aronson 1994; American Association of University Women 1992). NOT IN MY CLASSROOM.....I hoped!! But, secretly I had wondered about this for years. Are my girls being cheated in mathematics because of who I call on and when? If girls are being cheated, who else is? Are my second language students being treated equitably? Why is it that in my third/fourth multigrade classroom my first year students (usually third graders) are much more reluctant to share their thinking than my fourth graders (usually my second year students)? Is it really due to the age difference or the comfort level of the older children with me, or am I unaware of practices I use that are systematically silencing these newer, younger students during class discussions? Have my behaviors hindered some while giving greater access to others?

## Searching for Honest Answers

The message I am about to share is an intimate look at myself and my practices as I searched for honest answers to the above questions. No one is born prejudiced. All forms of bias, from extreme bigotry to unaware cultural biases, are acquired – actually imposed – on the young person and are dysfunctional (Weissglass, in press). To effectively become aware of equity and deal with it meaningfully, I had to look deeply inside myself to understand how my own life experiences have affected my biases and who I am. As a participant in the *Equity in Mathematics Education Project**, I had the opportunity to do just this. I listened as people shared their stories. I had the opportunity to share mine. As a

*The *Equity in Mathematics Education Project* is funded by the *California Math Project*. Its goal is to increase the ability of California educators to address equity issues in mathematics education productively.

result of this sharing, I began to discover how biases imposed on me were affecting my classroom practices. I discovered I had a voice and the power to make changes as I gained deeper understanding of myself. My passivity was no longer useful. Using my voice by giving permission for some of my writings to be published in a newsletter was my first step. As a result of greater self understanding, I could change what needed to be changed. Educational change must be grounded in personal and concrete understandings (Weissglass, in press). The focus of my self reflection was to gain personal and concrete insights enabling me to become a more effective teacher. In this case, becoming a more effective teacher meant giving access, support and respect to all students during whole group class discussion.

Gathering information about my classroom practices posed a problem. I had considered video taping as a means to find out what I was doing. The problem was that I would know I was being taped, consequently I would be on my "best behavior". I wanted information on what I was doing subconsciously, day-to-day. Audio taping and peer scripting of my lessons posed the same problems as video taping. As I pursued my self study, I found research that contradicted these beliefs. This research indicates that even when one knows the camera is on, video taping will show many teachers unintentionally but systematically demonstrating their biases (Kaplan and Aronson 1994). Despite this research, I still had my doubts.

### Recording Class Discussions

As part of class discussions, I routinely record students' responses on chart paper as the discussion progresses. When making these charts, I record the student's contribution word for word and put the student's name after the contribution. (In the beginning, I ask students for their permission to record their thinking. It is understood that students always have the right to revise their ideas or ask that their thinking not be recorded.) I like to make a written recording of student's contributions

for several reasons: writing student responses gives a context for modeling correct use of punctuation, capitalization and spelling; it helps students see the relationship between the spoken and the written word; it gives students access through two modalities – auditory and visual; it gives me a written record of student responses which I can use for reflection after the lesson; it allows students to read and reflect about previous related experiences which helps them to make connections from one activity to another; and **most importantly**, it shows students I respect their thinking, that is, their ideas are important enough to be written down. This respect encourages their thinking, often at a deeper level.

This practice of recording class discussions gave me the insight I needed about my unaware practices. Since I had charts that covered several weeks of discussions, I was able to use these charts to take an honest look at the dynamics of whole group discussions in my classroom. With this information I would be able to make sound conscious changes in my behavior that would improve my teaching by giving greater opportunity and respect to all students.

### What I Found

Here's what I found: In almost all cases, I called on two boys first, then a girl. Overall, I called on more girls (52% of the time and the class was 50% girls), but the boys were given the first opportunity. In addition, I also found that I tended to call on fourth graders before third graders and that second language students were often included towards the end of discussions. I had found unexpected patterns of bias. These practices were upsetting. I had thought that these things did not happen in my classroom yet the evidence was clearly recorded by me on nine charts of student discussion covering several weeks.

Why was this happening? The boys I usually called on first were bright, enthusiastic, verbal and wriggly. Their behavior caught my attention and I think I may have called on them partly to control behavior. I knew the others, the girls, the first year students and the second language

children, would wait. I also believed these boys had a lot to contribute to the discussion. Sometimes their comments triggered the thinking of other students.

Soon after my discovery, I asked the students about their perceptions. I asked them who they thought I called on first. Their responses were very interesting. In language arts, they felt I called on girls first, but in math, I called on boys first. Their perception matched the reality recorded on the class discussion charts in math. While disappointed with myself, this new information provided an ideal opportunity to make positive changes in the way I ran class discussions.

While the charts captured an important part of discourse in my classroom, they didn't capture everything. I was only recording the students' responses, not who was volunteering but not being called on, not my questioning, my responses, my body language etc. This was not intended to be a scientific study but rather a sharing of a method I used to look at my own biases. I had enough information that I could make positive changes yet not so much information that I felt overwhelmed and defeated. The idea to use the class discussion charts to look at my behaviors came to me after I had done them, so I knew they represented day-to-day practices for the few areas I was thinking about. Other possible sources of information I could have used might havebeen student reflections on what happened in class including journal entries, group projects, reflections, responses to such questions as "How did you feel about your learning?" or "How do you feel about this discussion?" etc.

### The Process of Recovery and Change

No one is born prejudiced. It is possible to recover one's full humanness. The recovery process is uncomfortable because we have numbed out the pain we endured while acquiring the bias, but recovery is possible (Weissglass, in press). By looking at my practices **honestly and without condemning myself**, the process of recovery and change began. I was able to remain open, freeing myself to try new ideas with my students'

best interests in mind. Here are some changes I've made as a result of this process:

I now make a conscious effort to give all children equal opportunities to respond first and equally in all class discussions. Whenever possible I have visitors or my student teachers script class discussions. I continue to monitor myself through the charted recordings of class discussions. Before calling on a child, I pause to carefully consider who has been heard and who is still waiting to be heard. Not only does this pause help me make better decisions about who to call on, but it also allows students additional think time. This additional think time gives students who process more slowly an opportunity to formulate their thoughts, allowing them greater access to discussions.

Besides making a conscious effort to give all students equal opportunity and access to class discussion, I also consider the types of questions I ask all students. Because my goal is not only to give all students equity and access to discussions but to help them think as deeply as possible about their ideas, I routinely ask questions that require explanation or justification of their thinking. Students are encouraged to question or state their agreement or disagreement with each other or me.

### Using Dyads

The issue with second language students remains a struggle for me. Their pattern of volunteering allows them access to the later part of the discussion. I am honoring this for now for two reasons: first, perhaps they need to listen longer in order to process in a second language and second, because I rarely call on students unless they volunteer. I am a person who rarely shares in large group discussions. The thought of doing so paralyzes me with fear. To be singled out when I haven't volunteered renders me speechless and embarrassed. Even though I am silent, I am listening and learning from my peers throughout the discussion. The problem for me as a teacher occurs when students don't volunteer. Because of who I am and my own anxieties, I don't usually force students

to participate by calling on them. So, how do I encourage students? In an attempt to draw in these students I now use dyads routinely. A dyad is a structure in which children are paired. Each receives an equal amount of time to share while the other listens without interrupting (Weissglass, in press). This helps all children clarify their thinking, thus building confidence before sharing with the whole group. Dyads allow everyone to listen carefully and to be heard by someone. Dyads occur before, after or even during class discussions. In dyads, students may use their primary language if they wish. This not only gives all students a voice, but helps all students clarify and deepen their thinking.

There is another approach that I have found helpful for encouraging participation. When I observe mathematically powerful thinking during student worktime I ask the student if he/she is willing to share his/her thinking later as part of the processing of the activity. This tells the child that his/her thinking is valued before sharing it publicly with the class and builds confidence. If the child chooses not to share, I ask permission for me to share his/her thinking, again valuing the child's thinking, building confidence, yet respecting his/her decision.

### What I've Observed

A year has passed since I started my reflection on these issues. The changes I have observed in the dynamics of discussions in my classroom seem to warrant my efforts. Girls are responding first about half the time, justifying their answers with confidence. They are willing to question. They will state their ideas backing up their thinking with sensible arguments.

I am pleased with my new group of first year students. I have had them for just four weeks. During class discussions in the first week, the number of students volunteering was about five to seven. These volunteers were mostly second year students. After four weeks and intensive effort on my part using the methods described, about 12-18 students out of 30 actively volunteer throughout discussions. These

volunteers include boys, girls, first year students, second year students and a few second language students. Scripting by observers and recordings of class discussions support these observations. When asked recently, student perception also supported this.

While my data is incomplete, it is a glimpse of what is going on with my behaviors...my biases. Recording class discussions has given me a way to see things I wasn't seeing before and to make better decisions. Race, class and gender bias are serious issues facing U.S. society and education that are usually not discussed. Talking about them is necessary – not to lay blame, but to figure out better ways of educating our children (Weissglass, in press). By understanding myself and looking at my biases openly and honestly, without self-condemnation, I am trying to figure out better ways to educate children. I am giving more students respect and opportunities. I also know that this is just the beginning of my journey.

## References

American Association of University Women. 1992. *How Schools Shortchange Girls*. Annapolis Junction: American Association of University Women.

Kaplan, Joel, and David Aronson. 1994. The Numbers Gap. *Teaching Tolerance*. 3:20-27.

Weissglass, Julian (in press). "The Social and Psychological Dimensions of Educational Change: Reflections on Working with Teachers." *Journal for a Just and Caring Education*.

*Maryann Wickett teaches a 3rd/4th multigrade class in a diverse setting at Paloma Elementary School in the San Marcos Unified School District. Questions and comments may be addressed to her at 660 Camino Magnifico, San Marcos, CA 92069 or sent by e-mail to mawickett@aol.com.*

How can teachers become aware of and change behaviors in the classroom that adversely affect their students? There are many theories about how this can happen. This is a story of how it did happen with one teacher.

*Uncovering Bias in the Classroom: A Personal Journey*

Order from:
Center for Educational Change in Mathematics and Science (CECIMS),
University of California, Santa Barbara, CA, USA, 93106
Make checks payable to UC Regents

Write for information about bulk discounts and postage costs for international orders.

BEST COPY AVAILABLE

*Illustration by Karen Stolper*

# Creating New Inequalities

## *Contradictions of Reform*

*High-stakes state-mandated standardization is rapidly spreading throughout the U.S. Ms. McNeil examines the widely emulated accountability system in Texas and concludes that it has adverse effects on teaching and learning, stifles democratic discourse, and perpetuates inequities for minority students.*

BY LINDA M. McNEIL

THE ENDURING legacy of Ross Perot's school reforms in Texas is not merely the strengthening of bureaucratic controls at the expense of teaching and learning. It is also the legitimating of a language of accountability as the governing principle in public schools. Incipient in the Perot reforms was the shifting of control over public schooling away from "the public" and away from the profession — and toward business-controlled management accountability systems. These systems use children's scores on standardized tests to measure the quality of the performance of teachers and principals, and they even use a school's aggregate student scores as data for the comparative "ratings" of schools.

There have been several iterations of state testing and test-driven curricula implemented since the reforms first begun under the Perot legislation in Texas in the mid-1980s. The current Texas Assessment of Academic Skills (TAAS) is rarely referred to by its full name. It is known by its advocates in the state government and among the state's business leaders as "the Texas Accountability System," the reform that has "shaped up" schools. It is touted as the system that holds "teachers and principals accountable." In many schools, tenure for principals has been replaced by "performance contracts," with "performance" measured by a single indicator — the aggregation of student TAAS scores in the school. Publicity about the "Texas Accountability System," centered on rising test scores, has generated copycat legislation in a number of states, where standardized testing of students is increasingly being used as the central mechanism for decisions about student learning, teacher and administrator practice, and even whole-school quality.[1]

Teachers know well that most reforms have a short life and that "this too shall pass." The specific rules and prescriptions enacted under the Perot reforms did, in-

*LINDA M. McNEIL is a professor of education and co-director of the Center for Education at Rice University, Houston. In a three-part series in the* Kappan *in 1988, she documented the ways that top-down, controlling administrative practices undermine the substance of schooling and the credibility that school-supplied knowledge holds for students. (See the January, February, and March 1988 issues.) This article is adapted from her new book,* Contradictions of School Reform: Educational Costs of Standardized Testing *(Routledge, 2000), the first study to track standardized reforms from their origins in the legislature to their control over curricula, teacher behaviors, and student achievement. To order, phone 800/634-7064. The price is $19.95.*

Reproduced with permission from Phi Delta Kappan



BEST COPY AVAILABLE

*Students are drilled on such strategies as the pep rally cheer "Three in a row? No, No, No!"*

deed, pass. But the institutionalizing of a shift in the locus of control over curriculum, teaching, and assessment, which began with the legislated reforms of the 1980s, has more than persisted.

As a result, a very narrow set of numerical indicators (student scores on statewide tests) has become the *only* language of currency in education policy in the state. Principals report that there can be little discussion of children's development, of cultural relevance, of children's contributions to classroom knowledge and interactions, or of those engaging sidebar experiences at the margins of the official curriculum where children often do their best learning. According to urban principals, many have supervisors who tell them quite pointedly, "Don't talk to me about anything else until the TAAS scores start to go up."

Teachers also report that the margins — those spaces where even in highly prescriptive school settings they have always been able to "really teach" — are shrinking as the accountability system becomes increasingly stringent, with teacher and principal pay tied to student scores. Under the Perot reforms, teachers were still sometimes able to juggle the official, prescribed, and tested curriculum with what they wanted their students to learn.[3] Even if they had to teach two contradictory lessons in order to ensure that students encountered the "real" information (as well as the test-based facts), many teachers managed to do so in order that their students did not lose out on a chance for a real education. Under TAAS, there are fewer and fewer opportunities for authentic teaching.

A continued legacy, then, of the Perot reforms is that the testing of students increasingly drives curriculum and compromises both teaching and the role of students in learning. This prescriptive teaching creates a new form of discrimination as teaching to the fragmented and narrow information on the test comes to substitute for a substantive curriculum in the schools of poor and minority youths. Disaggregating school-level scores by children's race appears to be an attempt to promote equity, but the high stakes attached to the scores have made many schools replace the regular curriculum in minority students' classrooms with test-prep materials that have virtually no value beyond practicing for the tests. The scores go up in these classrooms, but academic quality goes down. The result is a growing inequality between the content and quality of education provided to white, middle-class children and that provided to those in poor and minority schools.

## Mandating a Noncurriculum

In minority schools, in the urban school district where I conducted case studies, and in many schools across Texas, substantial class time is spent practicing bubbling in answers and learning to recognize "distractor" (obviously wrong) answers. Students are drilled on such strategies as the pep rally cheer "Three in a row? No, No, No!" (If you have answered "b" three times in a row, you know that at least one of those answers is likely to be wrong, because the maker of a test would not be likely to construct three questions in a row with the same answer indicator.) The basis for such advice comes from the publishers of test-prep materials, many of whom send consultants into schools — for a substantial price — to help plan pep rallies and to "train" teachers to use the TAAS-prep kits.

Under the Perot-era system of test-driven curricula, the observed teachers retained some discretion over how to "teach" to the test-based curriculum. They could teach the numbered curricular content items (as the district directed them to do). They could ignore the official, numbered curriculum and hope that their students would do well on the tests by virtue of having learned from the lessons the teacher had developed. Or they could try to juggle the two — an important option when they saw that the test-based curriculum format so trivialized and fragmented course content that the "knowledge" represented was too far removed from the curriculum the teachers wanted their students to learn. The testing, by having students select among provided responses, negated the teachers' desires that their students construct meaning, that they come to understandings, or that they connect course content with their prior knowledge.

Teachers, even those who know their subjects and their students well, have much less latitude when their principals purchase TAAS-prep materials to be used in lieu of the regular curriculum. The decision to use such materials forces teachers to set aside their own best knowledge of their subject in order to drill their students on information whose primary (often sole) usefulness is its likely inclusion on the test. A particular example reveals not only how test prep diminishes the role of the teacher, but also how it distances course content from the cultures of the students.

One teacher, a graduate of an Ivy League university with a master's degree from a second selective college, had spent considerable time and personal money assembling a rich collection of historical and literary works of importance in Latino culture. Her building of this classroom resource collection for her high school students was extremely important given the school's lack of a library. Her students responded to her initiative with a real enthusiasm to study and learn. Upon returning from lunch one day, she was dismayed to see that the books for her week's lessons had been set aside. In the center of her desk was a stack of test-prep booklets with a note saying, "Use these instead of your regular curriculum until after the TAAS." The TAAS test date was three months away. (The prep materials were covered with military camouflage designs, calling for "war against the TAAS." The company's consultants came to the school in camouflage gear to do a TAAS pep rally for the students and faculty.)

This teacher reported that her principal, a person dedicated to these students and to their need to pass the TAAS in order to graduate, had used almost the entire year's instructional budget to purchase these expensive materials. The cost was merely one problem. Inside the practice booklets for the "reading" test were single-page activities, with brief nonsense paragraphs, followed by TAAS-type multiple-choice questions. This teacher's students, who had been analyzing the poetry of Gary Soto and exploring the initiation theme in



BEST COPY AVAILABLE

*Bless Me, Ultima*, had to set aside this intellectual work to spend more than half of every class period working through the TAAS-prep booklet. This is not an isolated horror story. It is a case all too representative of the displacement of curriculum in the name of raising building-level test scores in minority schools.

The imposition throughout the entire school of TAAS-prep as a substitute curriculum recast the role of teachers, making them into people who need outside consultants to tell them ways to raise test scores (and to "pep them up"). That these commercial materials were imposed precluded resistance on the teachers' part. It also made it difficult for teachers to make accommodations at the margins, to try to hold onto the more substantive curriculum and cultural connections essential to real learning.

When their students' learning is represented by the narrow indicators of a test like the TAAS, teachers lose the capacity to bring into the discussion of the school program their knowledge of what children are learning. Test scores generated by centralized testing systems like the TAAS — and by test-prep materials aimed at producing better scores — are not reliable indicators of learning. It is here where the effects on low-performing students, particularly minority students, begin to skew the possibilities for their access to a richer education.

At the school whose principal had purchased the high-priced test-prep materials and at other Latino schools where TAAS-prep is replacing the curriculum, teachers report that, even though many more students are passing TAAS "reading" tests, few of their students are actual readers. Few of them can use reading for assignments in other classes; few choose to read or to share books with their friends. In schools where TAAS reading scores are going up, by whatever means, there is little or no will to address this gap. First, so much publicity surrounds the rising scores — and the principals' job security and superintendents' bonuses are contingent on that rise — that the problem of nonreaders is swept under the rug. Second, with the problem hidden, there can be no leverage to add the necessary resources, change the teaching, or invite discussions about the sources of the problem. In fact, the opposite occurs: the rise in scores is used to justify even more TAAS-prep, even more pep rallies, even more substituting of test-based programs for a serious curriculum.

Advocates of TAAS sometimes argue that being able to pass the reading skills section of TAAS is better than not being able to read at all. However, teachers are reporting that the kind of test prep frequently done to raise test scores may actually hamper students' ability to learn to read for meaning. In fact, high school students report that in the test-prep drills and on the TAAS reading section, they frequently mark answers without reading the sample of text: they merely match key words in the answer choice with key words in the text. And elementary teachers note that so many months of "reading" the practice samples and answering multiple-choice questions on them undermines their students' ability to read sustained passages of several pages. The reading samples are material the students are *meant to forget* the minute they mark their answers; at all grade levels this read-and-forget activity is using up the school year with a noncurriculum.

That this is happening chiefly in African American and Latino schools means that the gap between what these children learn and what the children in non-test-prep — usually middle-class and white — schools learn is widening even more dramatically. The subjects not yet tested (science, arts, social studies) are also affected as teachers in historically low-performing schools (minority, poor) are increasingly required to stop teaching those subjects in order to use class time to drill for TAAS math or reading — not to teach reading, but to drill for reading or grammar sections of the TAAS. As Angela Valenzuela has noted, under this system there is a growing, cumulative deficit separating minority students from the education being provided their more privileged peers.[1]

What is happening to and with students under the test-prep system — and what is happening to their access to curriculum content — is completely absent from consideration under an accounting system that uses only one set of indicators on which to base administrative, economic, and instructional decisions in schools.

Equally serious in its consequences is the legacy of institutionalizing the externalized authority over schools. During the years of desegregation, there were public discussions of the purposes of education, the role of the school in the community, and the issue of who should be educated and who should govern access to and provision for education. There were even debates over what constituted a public language with which to discuss public education — the languages of equity, of academic quality, and of community values all intersected and mutually informed the highly contested decisions regarding means to break the power of segregation. When education is governed by an "accountability system," these public languages are displaced by an expert technical language. When educational practice and policy are subsumed under a narrow set of indicators, then the only vocabulary for discussing those practices and policies and their effects on various groups of students is the vocabulary of the indicators — in this case, scores on a single set of tests.

Behind the test scores and the technical policy debates, however, is the growing reality that the Texas system of educational accountability is harming children, teaching, and the content of public schooling. Even more significant for the long run, this system of testing is restratifying education by race and class.

## The New Discrimination

The educational losses that a centralized, standardized system of testing creates for minority students are many. What such youngsters are taught, how they are taught, how their learning is assessed and represented in school records, what is omitted from their education — all these factors are hidden in the system of testing and in the accounting system that reports its results. The narrowing of the curriculum in test-prep schools is creating a new kind of discrimination — one based not on a blatant stratification of access to knowledge through tracking, but one that uses the appearance of sameness to mask persistent inequalities.

This masking shows up first in the words of well-meaning people who restratify expectations by a focus on "basics." The myth that standardization produces sameness — and therefore equity — is based on the notion that standardization "brings up the bottom." The idea is that everyone should get the fundamentals. First, students have to "get the basics" before they can get to the "creative" or "interesting" part of the curriculum. According to this myth, any good teacher or good school will "go beyond the basics" to provide a creative, in-



BEST COPY AVAILABLE

*The apparent "sameness" of the test masks persistent disparities in children's conditions of learning.*

teresting education.

There is increasing evidence that this focus on "basics" is being applied to minority children, who are viewed as "other people's children."[4] If "those children" are somehow different from "our children" (who are getting the regular curriculum), then they should be grateful for an education that provides them for the first time with the basics. But evidence from classrooms points out several flaws in the constructing of curriculum around the needs of "those students" for the basics.

First, students learn the "basics" when they undertake purposeful instructional activities, when they have models of thinking to emulate, and when they can see how new skills can be applied at the next level. The teachers in the schools in which I conducted case studies (heirs to Dewey and others) engaged students' minds so that they could learn both the "basics" and the ideas and knowledge that cannot be sequenced in a linear fashion because they are part of an organic whole. Yet officials' pride in the TAAS system stems largely from the notion that, "for the first time, those students are getting the same education that *our* students have been getting." The sameness is false, because the resources provided to the schools of minority children and to the academic tracks in which they are frequently placed are dramatically inferior to those provided to the schools and tracks of white, middle-class children. The apparent "sameness" of the test masks these persistent disparities in the conditions of learning that the children face.

That the political climate is becoming more accepting of this patronizing characterization of minority children was made graphically clear at an event in which Latino students would be demonstrating their learning. A white corporate executive had sponsored the implementation of several packaged curricula in Latino schools in a poor neighborhood. Each of the programs was expensive, including classroom materials, consultants to train the teachers to use the materials, tests to evaluate the students' mastery of the content, and so on. The curricular programs, in math and reading, were aimed at the "basics."

The Latino children, dressed in their Sunday best, filed in by grade level to demonstrate their skills in basic math operations. The children's parents and teachers were seated in the large hall. Between the performances by groups of children, the corporate executive would talk about the program. After one group of children had exhibited their skills in adding, he looked over the heads of the Latino parents to the white corporate and community leaders standing around the room and said, "Isn't this great? Now, this may not be the math you would want for *your* children, but for *these* children — isn't this just great?" His remarks were met with smiles and nods.

The pervasiveness of TAAS-prep as a substitute for the curriculum in poor and minority schools is legitimated by the tacit (and mistaken) understanding that for such children repetitive practice in test-drill workbooks may be better than what they had before and is useful in raising their test scores.

Data are beginning to emerge that document the exact opposite. In a compelling study to be released this year, Walter Haney has analyzed graduation rates of cohorts of high school students from 1978 to the present. Using official data from the Texas Education Agency, Haney tracked ninth-grade cohorts to graduation. In 1978, more than 60% of black students and almost 60% of Latinos graduated — 15% below the average graduation rate for whites. By 1990, after four years of the Perot-era standardization reforms, graduation rates for blacks, Latinos, and whites had all dropped. By 1990, according to Haney, *fewer than 50% of all black and Latino* ninth-graders made it to graduation. (The graduation rate for whites was more than 70%.) The gap between minorities and whites was widening. By 1999, Haney's data show that the white graduation rate had regained its 1978 level (around 75%). The graduation rate for Latinos and blacks, however, remained below 50%.[5]

Standardization may, through intensive test-practice drills, "raise scores." But standardization has not enhanced children's learning. To those who would say that the graduation rate is dropping because the TAAS is "raising the bar," one must answer that to increase cut-off scores and make no investment in equalizing educational resources is no reform. It is a creative new form of discrimination.

## Masking Inequities

The TAAS system of testing restratifies access to knowledge in schools. It further harms the education of poor and minority youths by masking historical and persistent inequities. When the precursor to TAAS was implemented in the 1980s, two rationales were given. First, it would provide an "objective measurement" of the curriculum. Second, according to a central office administrator, it would ensure that "Algebra I at [a poor, minority high school] is the same as Algebra I at [a suburban, middle- to upper-middle-class, mostly white high school]." The imposition of the test-based curriculum, however, carried with it no new resources for the historically under-resourced schools. Sameness, without massive investments at the under-resourced schools, is achieved by "leveling down" from the top, if at all. It is a poor proxy for equity.

The TAAS system of test-driven accountability masks the inequities that have for decades built unequal structures of schooling in Texas. The investments in expensive systems of testing, test design, test contracts and subcontracts, training of teachers and administrators to implement the tests, test security, realignment of curricula with tests, and the production of test-prep materials serve a political function in centralizing control over education and linking public education to private commerce.[6] But these expenditures do nothing to reverse the serious inequities that have widened over time across the state. In fact, investments in the "accountability system" are cynically seen to obviate the need for new investments in the schools. Even more cynical is the inverting of investments related to accountability *not* to equalize resources but to reward those whose scores go up: the investment comes as a reward for compliance, not as a means to ensure educational improvement.



BEST COPY AVAILABLE

Meanwhile, scarce resources at the school and district levels are being invested in those materials and activities that will raise scores, not in curricula of lasting intellectual or practical value to students. Experience over the past five years — the period in which principals have traded tenure for TAAS-based performance contracts — shows that it is the historically under-resourced schools, those serving the greatest numbers of poor and minority students, that have shifted their already scarce resources into the purchase of test-prep materials.

Jean Anyon writes compellingly in *Ghetto Schooling* about the pauperization of central city Newark — the dwindling of neighborhood resources in all areas of funding and public goods — as whites left those parts of the city.[7] The poverty of the people and the institutions that remained was a result of this pauperization by alliances of more powerful political and economic interests. In much the same way, the stratifying of academic resources in the name of compliance with an accountability system is pauperizing many urban schools, which only serves to compound their academic insufficiencies, since they are already academically weak and there is little public will to address their lack of resources.

## Accountable to Whom?

Accountability implies responsibility to a higher authority: being held to account for or being obligated to account to. Within the urban district I have studied and in the state of Texas, during the Perot reforms and at present, accountability has been invoked to locate the problems of schooling at the level of the lowest employees, the teachers. The use of the word itself distracts from the historical inequities in funding, staff allocation, investment in materials, and social support from the broader community. By implying a hierarchy and a culpability at the bottom of the system, such calls for accountability empower those who use the term. The presumption is that those who are calling for accountability feel that they are in control and that others (located beneath them) must answer to them. A common feint is to claim that "the public demands accountability" — though, when the public has tried to demand accountability in education, it has traditionally tried to make the top of the education structure responsive to its particular school and community.

The current accountability system bases assessment of schools and school personnel on children's test scores. A system of education that reduces student learning to scores on a single state test — and uses those scores for such high-stakes decisions as grade promotion and high school graduation — rules out the possibility of discussing student learning in terms of cognitive and intellectual development, in terms of growth, in terms of social awareness and social conscience, in terms of social and emotional development. It is as if the "whole child" has become a stick figure. Upper-level administrators who tell principals not to speak about their students or their programs except in terms of TAAS scores are participating in the de-legitimating of students as young human beings.

Furthermore, the reduction of students to test scores has two contradictory but equally depersonalizing effects. First, the individual scores ignore the social and collaborative aspects of learning. Second, in the reporting of scores, children are subsumed into depersonalized, often meaningless, aggregates. A 75% passing rate at a school this year may appear to be an improvement over a 66% passing rate at the same school last year, but in an urban setting there is no assurance that even half of the children are the same in two successive years.

The accountability system likewise depersonalizes teachers, flattening any representation of their particular practice into the aggregate pass rates for their schools. The role of principal has been severely limited; principals now have greater authority

## Has Any Good Come out of TAAS?

PROFESSOR Larry Cuban of Stanford University provided a response to the initial presentations of these findings in the symposium on the Moral and Historical Implications for Prescriptive Teaching at the annual meeting of the American Educational Research Association in San Diego in 1998. Cuban inquired whether this research fit the category of "the study of unintended negative consequences" of a policy. If so, he stated that that research tradition first required an examination of the intended *positive* consequences of the policy. Although I did not construe this study to be in the tradition he described, his question prompted me to reexamine the question of whether there had been positive consequences of TAAS that were not visible to me. To pursue this question, I raised the issue with dozens of teachers and a number of administrators during the year following the San Diego meetings.

Administrators, if they felt they were being "interviewed," answered with test score results (positive or negative). In more informal conversation, they discussed the pressures on them to produce test scores. Teachers tended to consider the question naive, unfair, or "unfriendly." Their answers led me to an ever greater understanding of many of the negative effects on reading and writing that I've alluded to here.

The two most positive responses not provided by central administrators or state officials to examine the effects of TAAS on teaching and learning are these. The first example comes from a largely Latino community in South Texas that saw its children's low TAAS scores as evidence that the state had neglected the school system by claiming it to be "satisfactory." This community successfully lobbied the state for additional funds. The second example comes from a middle school teacher. She said, "Yes, there has been a positive effect at our school from the TAAS. There were some LSE [limited English proficient] students who are now being taught math. They were getting almost no math instruction before." She paused and added, "But it's not real math. It's just TAAS math. It's not the math you'd want for your kids."

I am grateful to Larry Cuban for raising the question of positive effects. My school-level investigations have shown isolated, individual positive effects, but overwhelmingly generalized and widespread negative effects. — LMM

BEST COPY AVAILABLE

to allocate resources for activities aimed at raising test scores but less discretionary power to undertake other kinds of work in their schools or to have that work recognized.

The use of a language of accountability also takes the discussion of public schooling away from the normal language of families and communities. Parents feel that they have to master a jargon to understand how their children are doing; teachers feel mystified by the mathematical formulas that can turn known weak schools into "exemplary" ones. Parents report feeling confused by their children's TAAS report sheets.

Finally, "accountability" is a closed system that allows no critique. The only questions about the system that generate a response are those having to do with technical aspects: At what point should children whose first language is not English have to take the reading portion of TAAS in English? Are the test questions valid? Are they culturally biased? Is the cut-off score for graduation set too high or too low? Questions about technical tinkering are tolerated. And to all such questions, there is one basic answer: more controls. If there is lax security, the test materials must be more tightly controlled. If scores are going up, then test prep must be working. If scores are slipping, then more test prep must be needed. There is no acknowledgment among district or state officials that the real problem is not cheating by altering answer sheets. Instead, the real problem inherent in such an accountability system is that it severely undermines teaching and learning, while masking problems within the school.

The educational costs of standardization, then, include not only the direct impact on teaching and learning, but also the high costs of compliance when compliance silences professional expertise and marginalizes parental and public discourse.

If the language of accountability comes to dominate public school policy, it will eliminate the means by which the public — parents and teachers and other citizens of a community — can challenge the system of accountability. We have already seen the harmful effects of such a system on curriculum and teaching. We have seen its tendencies to create new forms of discrimination as its control mechanisms reward those administrators who shift resources into the means of compliance rather than toward improving the quality of education — a pervasive pattern in minority schools with a history of low scores on standardized tests.

More than two decades ago in *Legislated Learning*, Arthur Wise warned that attempts to legislate learning and to legislate teaching frequently have "perverse effects."[8] He was speaking of the kinds of effects that have been documented in the poor and minority schools described here in their responses to the TAAS. And the effects within schools and school systems may not be nearly so "perverse" as the effects within our system of democracy, because these attempts to legislate and control learning reduce the public's possibilities for retaining democratic governance of schools once the controls are in place. One reason for this — mentioned above — is that an accountability-based control system, because it is a closed system, structures out possibilities for external criticism.

Throughout the history of public schooling in America, maintaining our democracy has been cited as the fundamental justification for public support of schools. Education is essential for effective citizenship, for playing an active role in the economic, cultural, and political life of the nation. Democracy has been both the real reason for extending an education to all children and — at times — the cover story that masked our failure to provide such an education equitably. Even when the education we provided was inequitable, it carried such democratic slogans as "separate but equal." Given our democratic heritage, the ways in which the language of accountability is displacing democratic discourse need to be carefully examined.

The current accountability system has been implemented slowly and in stages. First came state tests that held almost no consequence for students; then came state tests that held moderate consequences for students (scores were recorded in their records but not used for high-stakes decisions). Now the system uses students' scores for the evaluation of teachers, principals, schools, and even districts. Students who have been in school only during the past 10 years (the life span of the TAAS) know nothing different. Teachers who have taught for fewer than 10 years and who have not come in from another state assume outcomes testing to be a sad but "inevitable" feature of schooling. The incremental normalizing of an accountability system and the casual use of its language in conversations about education can silence criticism and stifle the potential to pose counter models and to envision alternative possibilities. That is the insidious power of the language of accountability: to sound just enough like common sense not to be recognized as a language meant to reinforce unequal power relations.

It is only by understanding the differential effects of accountability systems on varied groups of students, on teachers, on parents, and on communities that we can know whether they serve our children and our goals for public education well. And it is only by going inside schools and inside classrooms that we can begin to build that understanding at a deeply informed level.

These highly rationalized and technical systems of schooling are being touted as very beneficial for their states and districts — after all, test scores are rising. When we examine such systems more closely, however, we may find that these benefits prove to be short-lived and as artificial and inflated as the test scores produced by months of test preparation. And we may also find that the costs of these systems are being borne by the weakest participants in our education systems — the children. The slogans of "reform" can be truly seductive. As researchers and as citizens we need to look behind those slogans and see what effects our fancy systems are having on the children.

---

1. Jay Heubert and Robert Hauser, eds., *High Stakes: Testing for Tracking, Promotion, and Graduation* (Washington, D.C.: National Research Council, 1998).
2. Linda M. McNeil, *Contradictions of School Reform: Educational Costs of Standardized Testing* (New York: Routledge, 2000), chap. 6.
3. Linda M. McNeil and Angela Valenzuela, "Harmful Effects of the TAAS System of Testing in Texas: Beneath the Accountability Rhetoric," in Mindy Kornhaber, Gary Orfield, and Michal Kurlaendar, eds., *Raising Standards or Raising Barriers? Inequality and High-Stakes Testing in Public Education* (New York: Century Foundation, forthcoming).
4. Lisa Delpit, *Other People's Children: Cultural Conflict in the Classroom* (New York: New Press, 1995).
5. Walter Haney, "Study of Texas Education Agency Statistics on Cohorts of Texas High School Students, 1978-1998," unpublished paper, Center for the Study of Testing, Evaluation, and Educational Policy, Boston College, 1999.
6. Walter Haney, George Madaus, and Robert Lyons, *The Fractured Marketplace of Standardized Testing* (Boston: Kluwer Academic Publishers, 1993).
7. Jean Anyon, *Ghetto Schooling: A Political Economy of Urban Educational Reform* (New York: Teachers College Press, 1997).
8. Arthur Wise, *Legislated Learning: The Bureaucratization of the American Classroom* (Berkeley: University of California Press, 1979).



BEST COPY AVAILABLE

# The Equity Principle

(from the NCTM Standards)

*Excellence in mathematics education requires equity—high expectations and strong support for all students.*

Making the vision of the Principles and Standards for School Mathematics a reality for all students, prekindergarten through grade 12, is both an essential goal and a significant challenge. Achieving this goal requires raising expectations for students' learning, developing effective methods of supporting the learning of mathematics by all students, and providing students and teachers with the resources they need.

Educational equity is a core element of this vision. All students, regardless of their personal characteristics, backgrounds, or physical challenges, must have opportunities to study—and support to learn—mathematics. Equity does not mean that every student should receive identical instruction; instead, it demands that reasonable and appropriate accommodations be made as needed to promote access and attainment for all students.

Equity is interwoven with the other Principles. All students need access each year to a coherent, challenging mathematics curriculum taught by competent and well-supported mathematics teachers. Moreover, students' learning and achievement should be assessed and reported in ways that point to areas requiring prompt additional attention. Technology can assist in achieving equity and must be accessible to all students.

Equity requires high expectations and worthwhile opportunities for all.

The vision of equity in mathematics education challenges a pervasive societal belief in North America that only some students are capable of learning mathematics. This belief, in contrast to the equally pervasive view that all students can and should learn to read and write in English, » leads to low expectations for too many students. Low expectations are especially problematic because students who live in poverty, students who are not native speakers of English, students with disabilities, females, and many nonwhite students have traditionally been far more likely than their counterparts in other demographic groups to be the victims of low expectations. Expectations must be raised—mathematics can and must be learned by all students.

The Equity Principle demands that high expectations for mathematics learning be communicated in words and deeds to all students. Teachers communicate expectations in their interactions with students during classroom instruction, through their comments on students' papers, when assigning students to instructional groups, through the presence or absence of consistent support for students who are striving for high levels of attainment, and in their contacts with significant adults in a student's life. These actions, along with decisions and actions taken outside the classroom to assign students to different classes or curricula, also determine students' opportunities to learn and influence students' beliefs about their own abilities to succeed in mathematics. Schools have an obligation to ensure that all students participate in a strong instructional program that supports their mathematics learning. High expectations can be achieved in part with instructional programs that are interesting for students and help them see the importance and utility of continued mathematical study for their own futures.

Equity requires accommodating differences to help everyone learn mathematics.

Higher expectations are necessary, but they are not sufficient to accomplish the goal of an equitable school mathematics education for all students. All students should have access to an

excellent and equitable mathematics program that provides solid support for their learning and is responsive to their prior knowledge, intellectual strengths, and personal interests.

Some students may need further assistance to meet high mathematics expectations. Students who are not native speakers of English, for instance, may need special attention to allow them to participate fully in classroom discussions. Some of these students may also need assessment accommodations. If their understanding is assessed only in English, their mathematical proficiency may not be accurately evaluated.
Students with disabilities may need increased time to complete assignments, or they may benefit from the use of oral rather than written assessments. Students who have difficulty in mathematics may need additional resources, such as after-school programs, peer mentoring, or cross-age tutoring. Likewise, students with special interests or exceptional talent in mathematics may need enrichment programs or additional resources to challenge and engage them. The talent and interest of these students must be nurtured and supported so that they have the opportunity and guidance to excel. Schools and school systems must take care to accommodate the special needs of some students without inhibiting the learning of others.

Technology can help achieve equity in the classroom. For example, technological tools and environments can give all students opportunities » to explore complex problems and mathematical ideas, can furnish structured tutorials to students needing additional instruction and practice on skills, or can link students in rural communities to instructional opportunities or intellectual resources not readily available in their locales. Computers with voice-recognition or voice-creation software can offer teachers and peers access to the mathematical ideas and arguments developed by students with disabilities who would otherwise be unable to share their thinking. Moreover, technology can be effective in attracting students who disengage from nontechnological approaches to mathematics. It is important that all students have opportunities to use technology in appropriate ways so that they have access to interesting and important mathematical ideas. Access to technology must not become yet another dimension of educational inequity.

Equity requires resources and support for all classrooms and all students.
Well-documented examples demonstrate that all children, including those who have been traditionally underserved, can learn mathematics when they have access to high-quality instructional programs that support their learning (Campbell 1995; Griffin, Case, and Siegler 1994; Knapp et al. 1995; Silver and Stein 1996). These examples should become the norm rather than the exception in school mathematics education.

Achieving equity requires a significant allocation of human and material resources in schools and classrooms. Instructional tools, curriculum materials, special supplemental programs, and the skillful use of community resources undoubtedly play important roles. An even more important component is the professional development of teachers. Teachers need help to understand the strengths and needs of students who come from diverse linguistic and cultural backgrounds, who have specific disabilities, or who possess a special talent and interest in mathematics. To accommodate differences among students effectively and sensitively, teachers also need to understand and confront their own beliefs and biases.

Copyright © 2000 by the National Council of Teachers of Mathematics.